

Article type : Original Article

Title:

Perceived caring attributes and priorities of pre-registration nursing students throughout a nursing curriculum underpinned by person-centredness.

Running head: Caring in Pre-registration Nursing Education

Corresponding author:

Dr Neal F. COOK

PhD, RN

Reader

School of Nursing,

Ulster University,

Magee Campus,

Londonderry,

Northern Ireland

BT48 7JL

Tel: 44(0) 28 716 75463

Email: nf.cook@ulster.ac.uk

Twitter@: @NealFCook

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/jocn.14341

This article is protected by copyright. All rights reserved.

Professor Tanya MCCANCE

PhD, RN

Mona Grey Professor of Nursing

School of Nursing,

Ulster University,

Jordanstown,

Northern Ireland

BT37 0QB

Tel: 44(0) 28 9036 6450

Email: tv.mccance@ulster.ac.uk

Professor Brendan MCCORMACK

PhD, RN

Head of Division of Nursing

Nursing

Queen Margaret University

Queen Margaret University Drive

Musselburgh

Scotland

EH21 6UU

Tel: 44(0) 131 474 0000

Email: BMcCormack@qmu.ac.uk

Professor Owen BARR

PhD, RN

Professor of Nursing and Intellectual Disabilities

School of Nursing,

Ulster University,

Magee Campus,

Londonderry,

Northern Ireland

BT48 7JL

Tel: 44(0) 28 716 75141

Email: o.barr@ulster.ac.uk

Dr Paul SLATER

PhD

Lecturer in Statistics

School of Nursing,

Ulster University,

Jordanstown,

Northern Ireland

BT37 0QB

Tel: 44(0) 28 9036 8400

Email: pf.slater@ulster.ac.uk

Conflict of Interest statement

No conflict of interest has been declared by the authors.

Funding Statement

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

This article is protected by copyright. All rights reserved.

Abstract

Aim

This paper explores pre-registration nursing students' caring attributes development through a person-centred focused curriculum.

Background

Developing caring attributes in student nurses to the point of registration has historically been challenging. Globally, curricula have not yet demonstrated the ability to sustain and develop caring attributes in this population, despite its centrality to practice.

Design and Methods

This longitudinal cohort study tracked how university pre-registration nursing students (N = 212) developed their caring attributes over the three years of their programme using repeated measures at the end of each year with the same cohort. The Caring Dimensions Inventory (35 item version with 25 caring items under three constructs (technical, intimacy and supporting) and 10 inappropriate or unnecessary construct items) was used and data analysed using Mokken Scaling Analysis to create a hierarchy of actions that students deemed as caring. Repeated measures of analysis of variance enabled evaluation of changes in responses over time.

Results

Students developed their caring attributes throughout their programme, ranking 22 out of 25 as caring (with statistical significance) at the end of year one, 18 at the end of year two and all 25 caring items at the end of their final year. No unnecessary or inappropriate construct items were ranked as caring at any data collection point. Participants consistently ranked assisting a person with an activity of living, listening to a patient, and involving them in their care as the most caring actions.

Conclusion

This study found caring attributes can not only be sustained, but developed throughout a pre-registration nursing education programme grounded in person-centredness.

Relevance to clinical practice

- Internationally, caring attributes are challenging to develop and sustain throughout pre-registration education, largely being diminished over time.
- Little published evidence evidences how person-centred frameworks are successfully integrated into pre-registration nursing curricula to develop person-centred nurses.

Keywords.

Caring

Caring Dimensions Inventory

Mokken Scaling Analysis

Person-centred practice

Pre-registration nurse education

How should the findings be used to influence policy/practice/research/education?

- The results of this study should inform the development of pre-registration nursing curricula by Higher Education Institutes and practice partners striving to promote caring attributes and the values of person-centredness.

- Findings of the study should influence national regulators seeking to promote core professional values through highlighting in their standards that practice models promoting person-centredness can translate effectively to educational curricula.
- Studies that track how caring attributes are held over time after initial registration are necessary to determine how they are sustained in practice.

INTRODUCTION

Person-centredness has become a central concept for healthcare practice internationally (Edvardsson *et al.* 2010; McCance *et al.* 2013), rendering it an approach to practice that must be considered by nurse educators, particularly when it can improve experiences of care and outcomes.

Globally, nursing education has been challenged with developing and sustaining caring attributes in pre-registration nursing student (Murphy *et al.* 2009; Loke *et al.* 2015; Phillips *et al.* 2015; Arreciado Maranon and Isla Pera 2017), despite caring and person-centredness being at the core of nursing practice. This paper will consider how caring attributes, as a component of person-centredness, are held or lost in a cohort of nursing students over the duration of a pre-registration curriculum using the Person-Centred Nursing Framework (PCNF) (McCormack and McCance 2010) as its educational framework. In doing so, this paper will also isolate what nursing actions pre-registration nursing students rank as most caring at the end of each year of their three-year programme.

BACKGROUND

Caring in Pre-Registration Nursing Education

The retention and development of caring attributes in nursing has long been researched in pursuit of what Lord Willis (Health Education England (HEE) 2015) identified as a necessity if nursing graduates are to meet the challenges of current and future healthcare provision within a person-centred

context. The Willis Commission (Royal College of Nursing (RCN) 2012) and Francis (2013) support this position, highlighting the need for nurses to hold values and attributes conducive to compassionate, safe care, but also to live these out in their actions. The current evidence-base on the presence and retention of such values in nursing education support Francis' view that this is a challenge. Indeed, this is also reflected internationally with one Spanish study identifying that student nurses about to enter their profession interpreted caring as a low value activity that can be delegated to others (Arreciado Maranon and Isla Pera 2017). This was despite these newly qualified nurses seeing care at the core of nursing. Francis' position has been further reinforced by Berwick (2013), Keogh (2013) and Bubb (2014). Other evidence supports this position: Benson *et al.* (2012) determined that Canadian pre-registration nursing students developed their concepts of caring over the first and second year of their education, but had no significant change in their third year. While the development of the students' concepts of caring is positive, all concepts of caring on the Caring Dimensions Inventory (CDI-35) (instrument used to measure caring attributes) were not ranked as caring by the students at any point, illustrating they still had further to go (according to the CDI-35) (Watson *et al.* 1999). The students' experiences of learning in practice were highlighted as a significant factor in influencing their development in this regard. Watson *et al.*'s (1999) study, using the same tool in the UK, echoed Benson's findings, but stopped at Year 2 and did not detail the extent of ranking of caring items at the point of registration, leaving an incomplete picture.

A more worrying trend is found in other studies. While most studies show that students largely begin their programmes with values and aspirations that represent caring, compassion and person-centredness (Currie *et al.* 2015; Phillips *et al.* 2015; Loke *et al.* 2015), some studies show that these are diluted/reduced over time. Loke *et al.* (2015), in a robust, cross sectional study of student nurses in Singapore, found a statistically significant reduction in the overall level of caring behaviour from first (n = 240) to final year (n = 417). This was also reflected in Murphy *et al.*'s (2009) UK study with

two cohorts of nursing students (n = 84, 94) and this dilution is attributed to the practice learning experiences of students. Similarly, in its early stages, Phillips *et al.*'s (2015) also echoes these findings with first year nursing students in the UK. In contrast, Tuckett (2015) determined that values held at the point of entry can be sustained to the point of registration, regardless of the socio-cultural factors that student's experience. Tuckett's research supports the views of O'Donnell *et al.* (2017) in that Tuckett's results identified that problem solving and challenging learning environments were central to such retention of values, particularly when they could make positive contributions. Such evidence is central to addressing the issues identified by the Willis Commission (RCN 2012) and Francis (2013), but also requires further evidence to illuminate the fuller picture of the factors that form such a transformational experience. In particular attention needs to focus on the practice learning element of programmes when this component of the educational experience appears to often be the dilutional factor. It is clear from the literature that this is an international challenge for nursing and one which led to this study to explore pre-registration nursing students' caring attributes development through a person-centred focused curriculum.

Person-Centredness and Nursing Education

McCormack *et al.* (2006) identified that person-centredness is concerned with professionals and people (patients, families and communities) coming together in a therapeutic alliance grounded in shared values and knowledge, located in a reciprocal relationship. Central to person-centredness is caring, with a plethora of studies identified by McCormack *et al.* (2006) illustrating the synergy between the two. While person-centredness has gained traction in practice in terms of positively influencing the quality and outcomes of care, its translation to nurse education is less evident (O'Donnell *et al.* 2017). The PCNF (McCormack and McCance 2010) synergises the conflict between vocational and skills ideologies with the critical thinker practising collaboratively from a values base; therefore, such a framework holds the potential to do the same within nurse education. While

caring has become a political focus in recent years because of a variety of high profile systems failures (RCN 2012, Francis 2013), the many studies researching caring and its attributes in student nurses and their journey to registration have not resulted in an evident cohesive educational philosophy for pre-registration nursing standards focused on personhood.

In reviewing the place of person-centredness within nursing curricula, O'Donnell *et al.* (2017) found that the operationalisation of person-centredness within curricula, largely has not occurred in curriculum development and delivery. This is despite the concept and terminology being widely used in the literature. The focus on the components of nursing, rather than on an integrated blend of the science and art of nursing for the purpose of caring holistically, tended to dominate and led to a sense of dissatisfaction and failing to achieve the potential of nursing education. This is echoed by O'Connell *et al.* (2014) and it is not clear whether future national regulators will take cognisance of this in any country.

The PCNF (McCormack and McCance 2010) places people at the centre of care, recognising that the nurse-person relationship does not exist in a microcosm, but that effective practice is a cultural, social and relational phenomenon with influencing factors that are interdependent on each other.

While the PCNF is not an educational framework, no person-centred educational framework currently exists. If practice and nursing education are to be aligned, it could be argued that the underpinning framework for both should be synergistically aligned. No previous curricula have been identified that have applied such a framework to curriculum design, culture and delivery and yet this could arguably be a route to the ontological translation identified as necessary by O'Donnell *et al.* (2017). Indeed, as a precursor to this study, O'Donnell *et al.* conveyed how such an approach was applied to the pre-registration nursing curriculum with which this study is concerned. (It should be

noted that the PCNF has been revised in 2017 by McCormack and McCance, resulting in the Person-Centred Practice Framework, taking account of the need to work within a multiprofessional healthcare context). In considering the relationship between caring and person-centredness, McCormack and McCance (2010) advocate that the person in person-centredness refers to people involved in a caring interaction, most notably when they are central to that interaction; caring is therefore an implicit component of person-centredness and the PCNF itself.

The Curriculum and Person-Centred Nursing

In 2012, the School of Nursing where this study took place had its first intake into a programme based on the Nursing and Midwifery Council (NMC) 2010 standards for pre-registration nursing education and the PCNF. This represented a substantial change in approach for the School and practice partners. In pursuing this approach, one aim was to create a culture of person-centredness that would translate into practice. In 2006, McCormack *et al.* published the Person-Centred Nursing Framework (PCNF) which was further refined in 2010 (McCormack and McCance 2010) (Figure 1). The model developed from conceptual frameworks by McCormack (2001, 2003), McCance *et al.* (2001) and McCance (2003), has its origins based in measuring the effectiveness of person-centredness in practice. Four constructs emerged within the original framework (see Table 1) (McCormack *et al.* 2006).

The framework represents the context which Morall and Goodman (2013) consider nurse education should be concerned with. They advocate that nurse education should be philosophically informed by social theory, reflecting its historicity and its context within society. The PCNF therefore reflects that nursing is about caring for people within a practice-based profession where collaboration and teamwork are influencing factors. The framework can be considered to overcome the vocational and

skills focused ideology that Morall and Goodman (2013) claim undermines critical thinking by recognising how values, power influences and applied decision-making influence how we care for people. Thus, the need for criticality is recognised and represented.

Successful completion of the programme in this study led to a Bachelor's of Science with honours in Nursing (360 credits). The programme met the EU directive (2005/36/EC) for nursing education; 50% of the course was in the practice setting (2300 hours) and 50% in the University setting (2300 hours). The course was approved by the NMC for two fields of practice; Adult and Mental Health. This was within the provision and expertise of the School. Each year of the course incrementally develops students based upon the progression point criteria as set out by the NMC (2010).

The curriculum in this study uses the PCNF (McCormack and McCance 2010) as its axis and therefore recognises that care is delivered within a socio-political context. In designing the curriculum, the elements of the PCNF were mapped to the NMC standards for pre-registration nursing (2010) and subsequently to each module within the curriculum. This enabled the curriculum planning team to ensure that the core components that lead to person-centred outcomes were addressed within the curriculum on an incremental, developmental basis over the three years of the programme while also meeting the requirements of the regulator. The curriculum recognises that the PCNF is idealistic; it does not make assumptions that person-centredness is easily achieved, but rather that nurses have to create the conditions for a person-centred culture at macro and micro levels. In order for students undertaking this programme to have such skills, the curricular approach focused on enabling students to develop the critical thinking and reflective skills necessary to be agents of change and action within the context of person-centred care. The classroom setting provided opportunities to begin the cognitive processes in this regard, while the practice setting ultimately enabled students to begin living the educational experience and the development of the socio-political skills necessary to be the person-centred nurse.

In achieving this, the curricular approach acknowledged that education, in a form of transmission of knowledge, is limited. Rather, Freire (1972) advocates a dynamic, developmental approach that centres on the individual as the subject of learning and educator as mediator of the process (Backes *et al.* 2007). To facilitate this approach in practice, students negotiate their learning with their mentor through the use of a practice learning portfolio that engages them in critical reflection and action planning through a dialogical approach. This is quality assured by requiring students to meet national, regulated standards through learning outcomes; how they achieve and evidence this is open to the student to individualise and evidence within their portfolio for practice learning, authenticated by their mentor in practice. Students also are aligned with a link lecturer when in practice, whose role it is to help students realise their potential through critical, reflective dialogue with the student and mentor with regards to their learning and development in a practice setting.

This dialogic nature of education is central to a Freirean philosophy as it is the medium by which the emancipatory pedagogic relationship is achieved (Liambas and Kaskaris 2012). In such, it is a critical medium that leads to critical consciousness in the learner, the basis through which the individual's potential is realised by them and creates the conditions for transformative change. This occurs through self-liberation by and with knowledge and in a cognitive, cultural and socio-political context (Liambas and Kaskaris 2012). In other words, as the student begins to engage with and understand the world they are in and the interconnected relationships between people, history, culture and politics, they gain a greater understanding of the world and how to navigate it. This navigation is necessary for them to realise their goals and in this sense, is a self-liberating process. The purpose is therefore to avoid a process of transmission of knowledge, but to immerse the student in a method of learning that awakens their consciousness to the variety of influences that impact on care, all centrally identifiable within the PCNF.

THE STUDY

Aims

The aims of this study were to:

- determine student's perceived caring attributes over the duration of a three year pre-registration nursing curriculum grounded in person-centredness.
- identify what nursing actions pre-registration nursing students rank as most caring at the end of each of the three years of their pre-registration nursing programme.

Design

This longitudinal cohort study tracked changes in students' caring attributes over the three years of their programme using repeated measures at the end of each year with the same cohort. This enabled changing perspectives on caring to be illustrated over time whilst students developed through the curriculum.

Participants

A cohort of pre-registration adult and mental health nursing students were the population for the study (purposive sample); only these two fields of practice are delivered by the School of Nursing. Over the three years, there were 168-174 (174 in years one and three and 168 in year two) adult field students and 37-38 mental health students (38 in years one and three, 37 in year two). The total population was therefore 212, 205 and 212 students for years one, two and three respectively (both fields combined). The fluctuation in numbers represents students going on leave of absence and other students returning to the programme. Students were recruited to the study by emailing

them a participant information sheet in order to enable them to give valid, informed consent to participate. Invitations to participate were sent through the School administrator. The sample was purposive as students needed to be enrolled on the curriculum based upon the PCNF.

Caring Dimensions Inventory

The Caring Dimensions Inventory (CDI-35, used with permission) (Watson et al 1999, 2001) was used to determine the degree to which students perceive their actions as representative of caring within the context of psychosocial, technical, professional, inappropriate and unnecessary activities. Currently no other tool exists to measure caring attributes or person-centredness in student populations. As identified earlier, caring is a central component to person-centredness; 25 items of the CDI-35 are caring (classified as either intimate, technical or supporting), with the remaining ten items classified as either unnecessary or inappropriate. Items not classified as caring provide context in relation to applied professional values for actions that are inappropriate in and to measure how students perceive actions that could be ambiguous. Responses are scored using a five-point Likert scale for students to express how much they agree or disagree with a particular action as being caring (1 – strongly agree, 2 - agree, 3 – neutral, 4 – disagree, 5 – strongly disagree). This provided the context of student development from a person-centred nursing perspective.

The CDI-35 has an intraclass correlation coefficient of .67 for test-retest reliability indicating it is highly consistent within raters over time and its reliable use in measuring perceptions of caring (Watson 2003). Content validity has been established through literature and peer review over time. The original 25 item CDI was determined by Watson and Lea (1997) to have a high degree of internal consistency (Cronbach's $\alpha = 0.91$). In this study, Cronbach's α for the CDI-35 was calculated as being .863, also confirming a high degree of internal consistency. Items of the CDI-35 are aligned

with one of five constructs based on exploratory factor analysis using principal components analysis followed by oblique rotation as undertaken by Watson *et al.* (2001) and Lea *et al.* (1998). In order to isolate the closest alignment of items with constructs, the strongest statistical alignment across both studies were chosen.

Data Collection

The CDI-35 was administered at the end of each year of the three-year programme through a secure online platform (Qualtrics®). Each student in the population was emailed through the central University system with a link to access the survey anonymously. A reminder email was sent two weeks after the initial email. Data were collected from October 2013 until October 2015.

Ethical Considerations

Ethical approval for the study was obtained through the School ethics filter committee at the University where the study took place (reference Cook-201211/3.3). The filter committee panel were not involved in data collection to avoid dual agency. Participants were provided with a Participant information sheet and informed consent was obtained as part of the online questionnaire through the online platform used. Each participant was informed of their right to abstain from participation and to withdraw at any stage without repercussions. No participant could be linked to their response.

Data Analysis

CDI-35 data was exported from SPSS (version 22.0) in a data file (.dat) format for uploading into Mokken Scaling Procedure for Windows (MSP5). Mokken scale analysis reduces data for unidimensional measurement of latent variables in order to yield an analysis of patterns of responses to a set of questions (van Schuur 2003; Watson et al 2003; McCance *et al.* 2008). It extracts scale items to create a positively scored list of items from the CDI-35 and arrange them into a hierarchy (Watson *et al.* 2001; McCance *et al.* 2008). Placement in the hierarchy indicates more positive overall scoring by the respondents than lower-placed items. H-values (Loevinger's coefficients scores) greater than 0.3 and p-values (probability levels) less than 0.05 indicate statistical significance. Data from each year (three sets of CDI-35 data) all had H-Values greater than 0.3 (0.43, 0.43 and 0.48 respectively). Confidence interval analysis was calculated based on population size per year and response rate. Year 1 confidence interval 4.04 (pop. = 212, sample size = 156); year 2 confidence interval 3.43; (pop. = 205, sample size = 164); year 3 confidence interval 2.69 (pop. = 212, sample size = 183); 95% confidence level, percentage 50% (www.surveysystem.com). Unit of analysis was at item level only, in line with instrument guidelines (Watson et al 2001).

Repeated measures analysis of variance (ANOVA and Kruskal-Wallis test) were used to evaluate the change in each variable in the CDI-35 over the period of the students' programme, i.e. at the end of years 1, 2, and 3. One-way analysis of variance (ANOVA) was performed for those items with normal distribution and Kruskal-Wallis test performed for those items breaching normality. The location of any significant differences was determined by post hoc contrasts and correlation changes through the calculation of Pearson's coefficients (Benson *et al.* 2012). For the results of ANOVA, the Bonferroni adjustment was made to the p values to compensate for multiplicity (Pallant 2010). For the results of the Kruskal-Wallis analysis, pairwise comparisons were performed to determine adjusted significance.

RESULTS

Year 1

A 73.5% response rate was achieved in the first year of data collection ($n = 156$). Eighty-three-point-three percent (83.3%) of respondents were adult field students and 16.7% were mental health field students; these figures represent responses from 74.7% of the adult cohort and 68.4% of the mental health cohort. Ninety-point-four percent (90.4%) of respondents were female and 9.6% were male. The majority of respondents were aged 22 to 34 (49.4%) with the next biggest category being 21 and under (30.8%). Nineteen point nine percent (19.9%) were aged 35 and over. Mokken Scaling Procedure for responses from students at the end of their first year resulted in 22 items from the CDI-35 being ranked (see Table 2). No items falling into the unnecessary or inappropriate constructs were ranked into these 22 items. The remaining items were rejected as H-Values were less than 0.3. This included items related to supporting (item 19), technical (items 2, 6,12 and 17), and intimacy (item 15) (see Table 2).

Year 2

An 80% response rate was achieved in the second year of data collection ($n = 164$). Eighty-four-point-one percent (84.1%) of respondents were adult field students and 15.9% were mental health field students; these figures represent responses from 82.1% of the adult cohort and 70.3% of the mental health cohort. Overall, 93.9% of respondents were female and 6.1% were male. The majority of respondents were aged 22 to 34 (50.6%) with the next biggest category being 21 and under (29.9%). 19.5% were aged 35 and over. Mokken Scaling Procedure for responses from students at the end of year two resulted in 18 items from the CDI-35 being ranked (see Table 2). No items falling into the unnecessary or inappropriate constructs were ranked into these 18 items. The remaining items were rejected as H-Values were less than 0.3. This included items related to supporting (items 19 and 30), technical (items 2, 6,12 and 17), and intimacy (item 15) (see Table 2).

Year 3

An 86.3% response rate was achieved in the third year of data collection ($n = 183$). Adult students made up 83.6% of respondents and 16.4% were mental health field students; 92.9% of respondents were female and 7.1% were male. These figures represent responses from 87.9% of the adult cohort and 78.9% of the mental health cohort. The majority of respondents were aged 22 to 34 (60.1%) with the next biggest category being 35 and over 21 (21.9%) and finally 21 and under (21.9%).

Mokken Scaling Procedure for responses from students at the end of year three resulted in 25 items from the CDI-35 being ranked (see Table 2). No items falling into the unnecessary or inappropriate constructs were ranked into these 25 items. All items falling into the constructs of technical, intimacy and supporting were ranked. The remaining items were rejected as H-Values were less than 0.3 (see Table 2).

CDI-35 COHORT ANALYSIS

One-way ANOVA analysis revealed significant changes in the means occurred for items 12 ($p < 0.001$), 16 ($p = 0.020$), 23 ($p = 0.024$), 24 ($p = 0.01$), 26 ($p < 0.001$), 27 ($p < 0.001$), 29 ($p = 0.018$) and 33 ($p = 0.013$) (see Table 3) [insert table 3 here].

Following Bonferroni adjustment (significant when $p < 0.05$), eight changes were identified as having occurred. Students had a significant change in mean scores between year 1 ($p = 0.002$) and year 3, and year 2 and year 3 ($p < 0.001$) when considering how caring organising the work of other was. Mean scores were more positive in year 3 than in years 1 and 2 (1.81, 2.17 and 2.25 respectively). In year 3, students were therefore more agreeable that this action was caring. With regards to how

caring sharing your personal problems with a patient was, students had a significant change in mean scores between year 2 and 3 ($p = 0.022$). While students disagreed that this action was caring in both sets, their degree of disagreement was stronger in year 2 than 3 (mean 4.30 and 3.97 respectively).

When considering how caring praying for a patient was, students had a significant change in mean scores between year 1 and 2 ($p = 0.019$). In this respect, means were higher in year 2 than 1 (3.16 and 2.84 respectively), indicating a stronger degree of disagreement that this action was caring.

Students had a significant change in mean scores between year 1 and year 2 ($p = 0.026$), and year 2 and year 3 ($p = 0.024$) when scoring how caring dealing with everyone's problems at once was.

Students disagreed to some extent in all three years that this action was caring. However, students disagreed more in year 2 than in years 1 and 3, which had similar mean scores (means 3.91, 3.60, and 3.61 respectively). When considering how caring making a patient do something, even if he or she does not want to is, a significant change in mean scores was found between year 1 and year 3 ($p = 0.019$), and year 2 and year 3 ($p < 0.001$). While students again disagreed to some extent in all years that this was a caring action, the strongest disagreement was in year 2 (mean 4.35) and the least in year 3 (3.84). Mean scores for assuring a terminally ill patient that he or she is not going to die were higher in year 2 than 3 (4.29 and 3.9 respectively, $p < 0.001$). In this respect, a stronger degree of disagreement that this action was caring existed in year 2. The sixth change was in relation to coming to work if you are not feeling well; a significant change in mean scores was found between year 2 and 3 ($p = 0.014$) with mean scores higher in year 2 than 3 (3.98 and 3.68 respectively). This indicated a stronger degree of disagreement that this action was caring in year 2 than year 3. Finally, mean scores for keeping in contact with a patient after discharge were higher in year 2 than 1 (4.16 and 3.84 respectively, $p = 0.012$), indicating a stronger degree of disagreement that this action was caring in year 2.

Non Parametric Analysis

Using the Kruskal-Wallis Test, items 3 and 20 showed a statistically significant change in response over years ($p = 0.05$ and 0.038 respectively). Undertaking a pairwise comparisons of year, for Item 3 (Feeling sorry for a patient), the significant change in scoring was found between year 2 and 3 ($p = 0.023$). However, Adjusted Significance showed this was not significant ($p = 0.070$). For Item 20 (being technically competent with a clinical procedure), the significant change in scoring was found between year 1 and 2 with adjusted significance statistically significant ($p = 0.031$). This indicates that students had a significant change in mean scores between year 1 and 2. In this respect, means were higher in year 2 than 1 (1.45 and 1.29 respectively), indicating a stronger agreement that this action was caring in year 1.

Discussion

The Francis report (2013) highlighted the need for nurses to hold values and attributes conducive to compassionate, safe care, but also to live these out in their actions. As part of this, Francis acknowledged that nurses educated through higher education are not necessarily rendered incapable of delivering personal care, but that the profession is challenged in keeping such values central to practice. Indeed, this is confirmed in studies internationally (Benson *et al.* 2012; Loke *et al.* 2015; Phillips *et al.*'s 2015; Arreciado Maranon and Isla Pera 2017). The results of this study confirm that students' perceptions of caring were more developed through their education on this programme, and that the practice they ranked highest as caring (at the end of year 3) was *assisting a person with an activity of living*. This is noteworthy in that it illustrates the value base of those entering the profession, particularly when students rank *listening to a patient* and *providing privacy for a patient* as second and third respectively and *involving a person in his or her care* as fourth. This is strongly aligned with the care processes construct within the PCNF and illustrates the foci of

practice for this cohort of students. Griffiths *et al.* (2012) highlighted how society has developed a perception that graduate nurses are driven toward academia rather than care and compassion and that this dualism has contributed to a health service that fails the people in its care. This is partly supported by ten Hoeve (2013) and Bridges (1990) who found that the media representation of nursing influenced public perceptions, often negatively, as a result of distorted representations, misconceptions, sensationalisation and stereotypes. However, the ranking of caring items by students in this study shows this perceived dualism not to be the case. Caring attributes can be enhanced and lived out through pre-registration education with a curriculum co-created and delivered around an effective framework.

Other studies have shown that the extent of caring illustrated in this study has not been achieved elsewhere, or at least not evidenced or published to have been so, despite the retention of caring attributes being a global challenge in nursing. As highlighted earlier, students in Benson *et al.*'s (2012) Canadian study did not identify and rank all aspects of caring in the CDI-35. They attributed the changes in the CDI-35 results over the duration of their study to be connected with the practice learning experience of students but also as a result of focusing on mutual respect and values. The study by Watson *et al* (2003) found nursing students to perceive caring practices more clearly as education progresses, similar to the results of this study. However, neither of the studies by Watson *et al* (1999, 2001) were longitudinal as they did not follow students to the point of registration. This study provides evidence that perceptions of caring can be positively developed up to the point of registration, addressing the challenges of valuing caring actions identified by Arreciado Maranon and Isla Pera (2017) within a curricular framework grounded in person-centeredness and delivered within a culture that reinforces it.

While it is important to recognise that students ranked all 25 caring items as such by the end of their programme, how their perceptions changed merits consideration. Students ranked fewer items as caring at the end of their second year, but scored with more definite views. By the end of year three, while all items were ranked as caring, views were not as strong. For example, students had a stronger level of disagreement that *keeping in contact with a patient after discharge* was caring in year two than in year three. This pattern was found to be significant for eight different items of the CDI-35 in the findings. At first glance, this may illustrate a weakening of perception in the final year students, but it may also represent students having had wider views on what these statements meant. In the example given, year two students may have considered that after discharge the relationship with the patient is severed, whereas the student at the end of year three may have considered how care is followed on into the community, back into outpatients, and how engagement in the personal journey through illness, within a professional context, may necessitate ongoing professional contact. Indeed, it could be argued that a transactional view of the relationship between patient and nurse is not person-centred and that the softening of views may represent a greater insight into the complexity of relationships. Regardless, while changes in perception were statistically significant for some elements of the CDI-35, students consistently ranked caring constructs as such on each occasion across the three years (at the end of each year), illustrating a stability in their caring perceptions. Additionally, the representativeness and confidence intervals provide surety in these findings.

Evidence from other studies have shown that students largely begin their programme with values and aspirations surrounding caring, compassion and the centrality of people to practice (Currie *et al.* 2015; Phillips *et al.* 2015; Loke *et al.* 2015). Loke *et al.*'s (2015) findings correlated exposure to practice with a reduction in caring behaviour over the period of pre-registration education, also found by Murphy *et al.* (2009) and Phillips *et al.* (2015). In contrast, the results of this study confirm

that a curriculum framed in person-centredness enabled students to develop an increasing grasp of caring concepts over time and that these values were not diluted by the practice learning experience. While less items were ranked as caring on the CDI-35 in year 2 of this study, the goal of education is to achieve the caring, person-centred nurse by the end of the three years, which this study supports. Tuckett (2015) examined values at the point of entry to the register and found that the traditional values remained central regardless of how political, cultural, organisation and professional factors shaped the delivery of care. This echoes the findings in this study, in that students held their values but also developed them over time. Together, the combined findings of these studies suggest that the curricular model and its translation and synergy with practice are central factors in successfully sustaining and developing caring attributes in pre-registration students.

The work of Griffiths *et al.* (2012), among others, has identified that people accessing nursing care seek nurses who make a professional caring attitude their priority. This is seen to manifest in sympathetic presence, the ability to connect through communication and in being non-judgmental. Participants in the study of Griffiths *et al.* had concerns as to whether these caring attributes can be developed in nursing education. The results of this research provide evidence that perceptions of caring can develop to a point of enhancement. However, how this is achieved is somewhat in contrast to what Carr (2008) advocates. Carr identifies that the role of the nurse should be the core focus of practice learning and the values of higher education and that the curriculum should be structured with this in mind. On a similar thread, Fawcett and Rhynas (2014) advocate that the focus of care should be on safety first and person-centredness second. This is somewhat contradictory as it suggests that the safety of the person is not embedded within person-centredness. The results of this study challenge both perspectives on curricula; placing the person at the centre of practice learning within a curriculum framed around standards required by the national regulators and of

higher education positively shaped the development of caring attributes while ensuring all standards were met. This posits that the person should be the focus, rather than the role of the nurse as the role of nurse will naturally develop in response to being person-centred when framed within professional standards. This also resonates with the work of Currie *et al.* (2015) who found students to be preoccupied with what nurses do rather than the experience of the person being cared for. Unfortunately, Willis (HEE 2015), in reviewing the educational needs of nursing, focused on skills and tasks, rather than on the application of those with a person-centred context, an approach evidenced by Currie *et al.* (2015) to be a distraction from how to care for people. Facilitating students to engage in a reflective, person-centred approach is therefore not only desirable, but necessary to avoid a procedural, role-profiled approach to developing the practitioner who places the person central to care. Currie *et al.* suggest that when students “step in” to care they immerse themselves in the person’s world and learn through direct interaction and engagement. Those who observed the work of the nurse and what they did were more aligned with being technical as opposed to interpersonal practitioners, drawing on inductive reasoning. The immersed student was found by Currie *et al.* to be creative and adaptive in their care.

Limitations

As with any survey design, there is the potential that response bias existed whereby students provided the responses they anticipated were expected; while minimised by giving an opt-out clause and using an anonymous platform for obtaining responses, the potential for such bias remains. It could be argued that responding as expected will still illustrate that students are aware of the values expected of nurses in society. The high response rate each year may be considered to be at odds with the anticipated levels of responses. However, other studies undertaken with University students have had high response rates; Dietz *et al.* (2013) had a 90.1% response rate to their questionnaire, which they attributed to advising the students in advance for the imminent release of

the questionnaire for completion and return, and to having faculty support for the study. These processes were adopted in this study, enabling students to have awareness of the study and advanced knowledge of the process before data collection techniques were deployed. Furthermore, the topic is considered salient to the students. In addition, as the data collection methods were the same for each cycle, familiarity is likely to have engendered students to respond, indicated by the increasing response rate from 73.5% in cycle one to 80% in cycle two to 86.3% in cycle three (all after data cleansing). Finally, Dietz *et al.* (2013) consider the anonymity of a questionnaire to also be a factor; while no respondent could be matched to a response, the sample population are easily identifiable and so the anonymity may not have compensated for the group being directly identifiable with the overall responses. Feeling valued and an integral part of the research process, however, may have offset this, engendering a sense of commitment to the process.

Recommendations

Longitudinal research extending beyond the point of registration would be helpful to determine how caring values and attributes are influenced/retained once students transition to their role as registered nurses. Whilst caring attributes were the focus of this research, the development of a research instrument that examines how pre-registration students perceive person-centred practice, such as the Person-Centred Practice Inventory - Staff (PCPI-S) for use with registered nurses (Slater *et al.* 2017), is recommended in order to maximise our understanding of the development of person-centredness within pre-registration nursing education.

Conclusion

Retaining and developing caring attributes within pre-registration students has been illustrated to be an international challenge to nursing education, with little success identified in this regard. This study illustrates that caring attributes can be sustained and developed further when the curricular framework is aligned with person-centredness and cohesively supported in both the academic and practice learning settings. Students in this research were necessitated to engage in the person's reality throughout their programme and they identified that they could be creative, intuitive and person-centred as a result of that immersion when it was coupled with authentic reflection and dialogue. Focusing on the experience of care within professional and caring dimensions moved students towards person-centredness.

Relevance to Clinical Practice

Globally, those engaged in providing pre-registration nursing education in both practice and higher education settings are challenged to reflect on the culture of their curricula and its synergistic delivery with the values we espouse. Although the evidence-base in this regard is still emerging, the results of this study support the view that practice frameworks that have proven successful in enhancing the care experience of people in practice may prove transferable to nursing curricula for the same effect.

Impact Statement

What does this paper contribute to the wider global clinical community?

- The findings of this study impact upon the social and educational perception of nursing students prepared through University pre-registration programmes illustrating the aspects of practice that students identify as most caring throughout their three years of education
- Students ranked assisting a person with an activity of living, listening to a patient, and involving them in their care as the most caring actions consistently across their programme, highlighting the core values student nurses place at the centre of their practice. This has the potential to positively impact on public confidence in higher education's ability to prepare nurses who are caring.
- This study shows that caring attributes can be sustained and further developed over the duration of a pre-registration nursing education programme grounded in person-centredness, illustrating that the challenge to sustain and develop such values can be met in higher education curricula

References

- Arreciado Marañón, A. and Isla Pera, M. (2017) Contradictory views of nursing care among students at the end of their nursing education. *Journal of Advanced Nursing*, 73(2), 410-420.
- Backes, D., Erdmann, A., da Silva, M. and do Prado, M. (2007) The practice of teaching and learning about nursing management based on Freire's methodology. *Online Brazilian Journal of Nursing*, 6(1), Available from: <http://www.objnursing.uff.br/index.php/nursing/article/view/659/155>. Accessed: 6 July 2015. doi: <http://dx.doi.org/10.5935/1676-4285.2007659>.

Benson, G., Martin, L., Ploeg, J. and Wessel, J. (2012) Longitudinal Study of Emotional Intelligence, Leadership, and Caring in Undergraduate Nursing Students. *Journal of Nursing Education*, 51(2): 95-101.

Berwick, D. (2013) *A promise to learn – a commitment to act: improving the safety of patients in England*. London: Department of Health.

Bridges, J.M. (1990) Literature review on the images of the nurse and nursing in the media. *Journal of Advanced Nursing* 15, 850–854.

Bubb, S. (2014) *Winterbourne View - Time is Running Out*. London: NHS England.

Carr, G. (2008) Changes in nurse education: Delivering the curriculum. *Nurse Education Today*, 28, 120–127.

Currie, K., Bannerman, S., Howatson, V., MacLeod, F., Mayne, W., Organ, C., Renton, S. and Scott, J. (2015) 'Stepping in' or 'stepping back': How first year nursing students begin to learn about person-centred care. *Nurse Education Today*, 35, 239–244

Edvardsson, D., Fetherstonhaugh, D. and Nay, R. (2010) Promoting a continuation of self and normality: person-centred care as described by people with dementia, their family members and aged care staff. *Journal of Clinical Nursing*, 19(17-18), 2611-2618.

Fawcett, T.N. and Rhynas, S.J. (2014) Re-finding the 'human side' of human factors in nursing: Helping student nurses to combine person-centred care with the rigours of patient safety. *Nurse Education Today*, 34, 1238–1241.

Francis, R. (2013) *Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry*. London: The Stationery Office.

Freire, P. (1972) *Pedagogy of the oppressed*. New York: Herder and Herder.

Griffiths, J., Speed, S., Horne, M. and Keeley, P. (2012) 'A caring professional attitude': What service users and carers seek in graduate nurses and the challenge for educators. *Nurse Education Today* 32, 121–127.

Health Education England (HEE). (2015) *Raising the Bar. Shape of Caring: A Review of the Future Education and Training of Registered Nurses and Care Assistants*. London: Health Education England.

Keogh, B. (2013) *Review into the quality of care and treatment provided by 14 hospital trusts in England: overview report*. London: NHS England.

Lea, A., Watson, R. and Deary, I.J. (1998) Caring in nursing: a multivariate analysis. *Journal of Advanced Nursing* 28, 66-671.

Liambas, A. and Kaskaris, I. (2012) "Dialog" and "Love" In The Work of Paulo Freire. *Journal for Critical Education Policy Studies*, 10(1), 185-196.

Loke, J.C.F., Lee, K.W., Lee, B.K. and Noor, A.M. (2015) Caring behaviours of student nurses: Effects of pre-registration nursing education. *Nurse Education in Practice*, 15, 421-429.

McCance, T., Gribben, B., McCormack, B. and Laird, E.A. (2013) Promoting person-centred practice within acute care: the impact of culture and context on a facilitated practice development programme. *International Practice Development Journal*, 3(1), 1-14.

McCance, T., Slater, P. McCormack, B. (2008) Using the caring dimensions inventory as an indicator of person-centred nursing. *Journal of Clinical Nursing*, 18, 409–417

McCance, T.V. (2003) Caring in Nursing Practice: The Development of a Conceptual Framework. *Research and Theory for Nursing Practice: An International Journal*, 17(2), 101 – 116.

McCance, T., McKenna, H. and Boore, J. (2001) Exploring caring using narrative methodology: An analysis of the approach. *Journal of Advanced Nursing* 56(5), 472-479

McCormack, B. (2001) *Negotiating Partnerships with Older People. A Person Centred Approach*. Ashgate: Aldershot.

McCormack, B. (2003) A conceptual framework for person-centred practice with older people. *International Journal of Nursing Practice*, 9, 202–209.

McCormack, B. and McCance, T. (2010) *Person-Centre Nursing – Theory and Practice*. Oxford: Wiley-Blackwell.

McCormack, B. and McCance, T. (2017) *Person-centred practice in nursing and health care: Theory and practice (2nd ed)*. Chichester: Wiley Blackwell.

McCormack, B., Dewar, B., Wright, J. Garbett, R., Harvey, G. and Ballantine, K. (2006) *A Realistic Evaluation of Evidence Relating to Practice Development*. Edinburgh: NHS Quality Improvement Scotland.

Morrall, P. and Goodman, B. (2013) Critical thinking, nurse education and universities: Some thoughts on current issues and implications for nursing practice. *Nurse Education Today*, 33, 935–937.

Murphy, F., Jones, S., Edwards, M., James, J. and Mayer, A. (2009) The impact of nurse education on the caring behaviours of nursing students. *Nurse Education Today*, 29, 254-264.

Nursing and Midwifery Council. (2010) *Standards for Pre-Registration Nursing Education*. London: NMC.

O'Connell, J., Gardner, G. and Coyer, F. (2014) Beyond competencies: using a capability framework in developing practice standards for advanced practice nursing. *Journal of Advanced Nursing*, 70(12), 2728-2735.

O'Donnell, D., Cook, N.F. and Black, P. (2017) Person-centred nursing education. *In*: McCormack, B. and McCance, T. (eds) *Person-centred practice in nursing and health care: Theory and practice* (2nd ed). Chichester: Wiley Blackwell, 99-117.

Pallant, J. (2010) *SPSS survival manual* (4th ed). New York: McGraw-Hill.

Phillips, J., Cooper, K., Rosser, K., Scammell, J., Heaslip, V., White, S., Donaldson, I., Jack, E.,

Hemingway, A. and Harding, A. (2015) An exploration of the perceptions of caring held by students entering nursing programmes in the United Kingdom: A longitudinal qualitative study phase 1. *Nurse Education in Practice*, 15, 403 – 408.

Royal College of Nursing. (2012) *Quality with Compassion: The Future of Nursing Education*. London: Royal College of Nursing.

Slater, P., McCance, T. and McCormack, B. (2017). The development and testing of the Person-centred Practice Inventory–Staff (PCPI-S). *International Journal for Quality in Health Care*, 24(4), 541-547.

ten Hoeve, Y., Jansen, G. and Roodbol, P. (2013) The nursing profession: public image, self-concept and professional identity. A discussion paper. *Journal of Advanced Nursing* 70(2), 295-309

Tuckett, A. (2015) Speaking with one voice: A study of the values of new nursing graduates and the implications for educators. *Nurse Education in Practice*, 15 258-264.

Van Schuur, W.H. (2003) Mokken Scale Analysis: Between the Guttman Scale and Parametric Item Response Theory. *Political Analysis* 11: 139-163.

Watson, R. (2003) Research in brief: Intrarater reliability of the Caring Dimensions Inventory and Nursing Dimensions Inventory. *Journal of Clinical Nursing* 12: 786–787.

Watson, R. and Lea, A. (1997) The caring dimensions inventory (CDI): content validity, reliability and scaling. *Journal of Advanced Nursing* 25, 8-94.

Watson, R., Deary, I.J. and Lea, A. (1999) A longitudinal study into the perceptions of caring among student nurses using multivariate analysis of the Caring Dimensions Inventory. *Journal of Advanced Nursing* 30(5), 1080-1089.

Watson, R., Deary, I.J. and Lea- Hoogbruin, A. (2001) A 35-item version of the caring dimensions inventory (CDI-35): multivariate analysis and application to a longitudinal study involving student nurses *International Journal of Nursing Studies* 38: 511–521.

Table 1 - Constructs of the PCNF

Construct	Focus
Pre-requisites	The core attributes of the nurse
The care environment	The context within which care is provided
Person-centred processes	The processes by which care is practiced
Expected outcomes	The product of effective person-centred practice

Table 2 - Ranking of CDI Caring Items Across Years (ranked in order by year three)

Item	Year 1				Year 2				Year 3				Construct
	Rank	Mean	ItemH	Z	Rank	Mean	ItemH	Z	Rank	Mean	ItemH	Z	
Assisting a patient with an activity of daily living (washing, dressing, etc.)	2	1.15	0.42	17.76	4	1.17	0.35	13.78	1	1.16	0.59	28.50	Technical
Listening to a patient	1	1.10	0.55	21.49	1	1.15	0.49	17.64	2	1.18	0.66	32.79	Intimacy
Providing privacy for a patient	5	1.15	0.62	26.12	5	1.17	0.52	20.37	3	1.21	0.62	32.27	Supporting
Involving a patient with his or her care	3	1.15	0.59	24.79	3	1.15	0.55	21.57	4	1.22	0.66	34.07	Technical
Reporting a patient's condition to a senior nurse	8	1.20	0.47	20.12	8	1.23	0.46	19.04	5	1.23	0.61	32.29	Technical
Explaining a clinical procedure to a patient	7	1.19	0.52	22.48	6	1.21	0.45	18.43	6	1.23	0.59	30.84	Technical
Getting to know the patient as a person	4	1.15	0.34	14.08	2	1.15	0.51	20.03	7	1.25	0.55	29.12	Intimacy
Consulting with the doctor about a patient	14	1.37	0.48	21.92	12	1.38	0.53	22.21	8	1.25	0.61	32.79	Technical
Giving reassurance about a clinical procedure	6	1.17	0.59	25.00	7	1.23	0.40	16.31	9	1.26	0.62	32.11	Supporting
Measuring the vital signs of a patient (e.g. pulse and blood	12	1.30	0.47	21.28	10	1.27	0.36	15.09	10	1.26	0.54	28.29	Technical

Item	Year 1				Year 2				Year 3				Construct
	Rank	Mean	ItemH	Z	Rank	Mean	ItemH	Z	Rank	Mean	ItemH	Z	
pressure)													
Observing the effects of a medication on a patient	15	1.39	0.37	16.61	13	1.38	0.47	19.25	11	1.30	0.53	27.33	Technical
Being honest with a patient	10	1.29	0.44	19.81	11	1.30	0.41	16.95	12	1.31	0.55	29.72	Intimacy
Sitting with a patient	9	1.24	0.43	18.86	9	1.26	0.43	17.88	13	1.36	0.57	30.87	Intimacy
Being technically competent with a clinical procedure	11	1.29	0.41	18.75	15	1.45	0.38	15.49	14	1.37	0.52	28.30	Technical
Being with a patient during a clinical procedure	13	1.35	0.47	21.92	14	1.45	0.40	16.20	15	1.38	0.57	30.68	Intimacy
Instructing a patient about an aspect of self-care (washing, dressing, etc.)	NR*	1.50	0.28	13.89	NR*	1.51	0.25	10.90	16	1.40	0.40	22.07	Intimacy
Making a nursing record about a patient	19	1.53	0.33	15.51	NR*	1.57	0.23	10.03	17	1.42	0.31	16.68	Technical
Arranging for a patient to see his or her chaplain	20	1.54	0.41	18.40	17	1.58	0.33	14.09	18	1.51	0.50	25.97	Supporting
Exploring a patient's lifestyle	16	1.42	0.40	18.16	16	1.47	0.46	18.59	19	1.55	0.48	25.96	Supporting
Keeping relatives informed about a patient	32	1.63	0.34	15.50	NR*	1.60	0.25	10.70	20	1.56	0.43	22.60	Technical
Attending to the spiritual needs of	18	1.46	0.44	20.75	18	1.61	0.37	16.35	21	1.57	0.40	22.13	Supporting

Item	Year 1				Year 2				Year 3				Construct
	Rank	Mean	ItemH	Z	Rank	Mean	ItemH	Z	Rank	Mean	ItemH	Z	
a patient													
Being neatly dressed when working with a patient	17	1.45	0.40	18.01	NR*	1.57	0.23	9.96	22	1.63	0.31	16.92	Technical
Being cheerful with a patient	31	1.55	0.38	16.32	NR*	1.65	0.29	11.77	23	1.66	0.42	20.39	Supporting
Putting the needs of a patient before your own	NR*	1.66	0.15	7.28	NR*	1.68	0.12	5.40	24	1.71	0.31	17.37	Supporting
Organising the work of others for a patient	NR*	2.17	0.26	11.38	NR*	2.25	0.21	8.49	25	1.81	0.32	17.43	Technical
Staying at work after your shift has finished to complete a job	NR*	2.07	0.21	9.53	NR*	2.24	0.16	6.43	NR*	2.27	0.22	11.51	Inappropriate
Praying for a patient	NR*	2.84	0.24	9.55	NR*	3.16	0.16	6.13	NR*	3.02	0.05	2.49	Unnecessary
Dealing with everyone's problems at once	NR*	3.60	0.14	5.03	NR*	3.91	-0.08	-2.49	NR*	3.61	-0.05	-1.96	Unnecessary
Coming to work if you are not feeling well	NR*	3.82	-0.02	-0.80	NR*	3.98	-0.13	-4.10	NR*	3.68	-0.09	-3.84	Unnecessary
Appearing to be busy at all times	NR*	3.88	-0.05	-1.58	NR*	3.85	0.00	-0.14	NR*	3.75	-0.08	-3.60	Inappropriate
Making a patient do something, even if he or she does not want to	NR*	4.15	-0.09	-2.43	NR*	4.35	-0.28	-7.16	NR*	3.84	-0.14	-5.48	Inappropriate
Assuring a terminally ill patient that he or she is not going to die	NR*	4.03	-0.08	-2.49	NR*	4.29	-0.22	-5.77	NR*	3.90	-0.18	-7.22	Inappropriate

Item	Year 1				Year 2				Year 3				Construct
	Rank	Mean	ItemH	Z	Rank	Mean	ItemH	Z	Rank	Mean	ItemH	Z	
Keeping in contact with a patient after discharge	NR*	3.84	0.07	2.41	NR*	4.16	0.00	-0.02	NR*	3.95	-0.08	-3.10	Unnecessary
Sharing your personal problems with a patient	NR*	4.04	0.12	3.21	NR*	4.30	-0.10	-2.25	NR*	3.97	-0.07	-2.43	Unnecessary
Feeling sorry for a patient	NR*	2.65	0.18	7.03	NR*	2.70	0.18	6.98	NR*	2.46	0.16	7.97	Unnecessary
* NR = Not Ranked	Lowerbound: 0.30 Adjusted Alpha: 5.6e-05 Critical Z: 3.86 n = 156 Scale coefficient H = 0.43 Scale Z = 61.90				Lowerbound: 0.30 Adjusted Alpha: 5.7e-05 Critical Z: 3.86 n = 164 Scale coefficient H = 0.43 Scale Z = 51.32				Lowerbound: 0.30 Adjusted Alpha: 5.6e-05 Critical Z: 3.86 n = 183 Scale coefficient H = 0.48 Scale Z = 88.41				

Table 3 - ANOVA Analysis

CDI Item		Sum of Squares	df	Mean Square	F	Sig.
12. Organising the work of others for a patient	Between Groups	19.452	2	9.726	10.273	.000
	Within Groups	473.383	500	.947		
	Total	492.835	502			
16. Sharing your personal problems with a patient	Between Groups	10.319	2	5.159	3.919	.020
	Within Groups	658.305	500	1.317		
	Total	668.624	502			
23. Praying for a patient	Between Groups	8.467	2	4.234	3.770	.024
	Within Groups	561.461	500	1.123		
	Total	569.928	502			
24. Dealing with everyone's problems at once	Between Groups	10.013	2	5.006	4.666	.010
	Within Groups	536.441	500	1.073		
	Total	546.453	502			
26. Making a patient do something, even if he or she does not want to	Between Groups	22.627	2	11.313	10.812	.000
	Within Groups	523.202	500	1.046		
	Total	545.829	502			
27. Assuring a terminally ill patient that he or she is not going to die	Between Groups	13.959	2	6.980	6.967	.001
	Within Groups	500.876	500	1.002		
	Total	514.835	502			

CDI Item		Sum of Squares	df	Mean Square	F	Sig.
29. Coming to work if you are not feeling well	Between Groups	7.402	2	3.701	4.072	.018
	Within Groups	454.494	500	.909		
	Total	461.897	502			
33. Keeping in contact with a patient after discharge	Between Groups	8.797	2	4.398	4.397	.013
	Within Groups	500.106	500	1.000		
	Total	508.903	502			

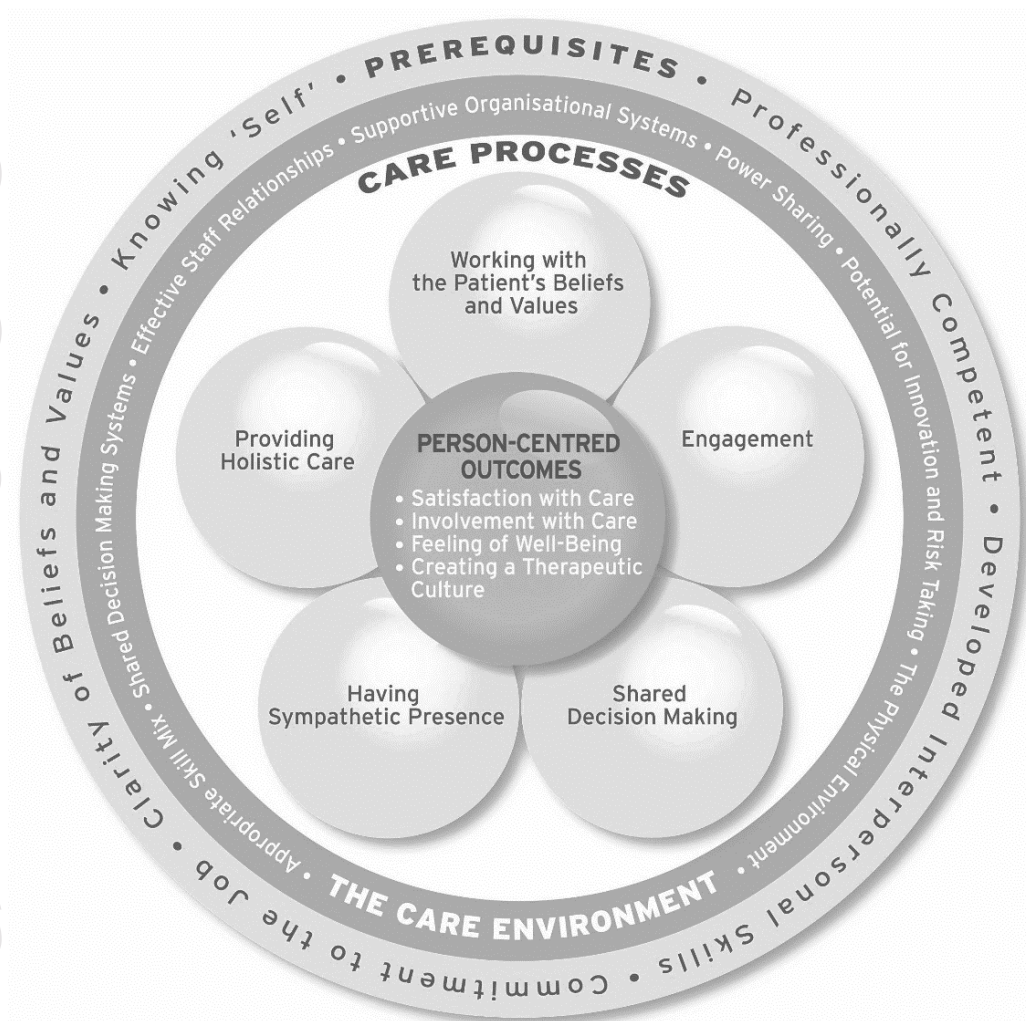


Figure 1 - The Person-Centred Nursing Framework (McCormack and McCance 2010) (with permission)